

ing. Near the Banks of Newfoundland fog was reported on 23 dates; between the 55th and 65th meridians on 14 dates; and west of the 65th meridian on 5 dates. Compared with the corresponding month of the last 5 years the dates of occurrence of fog near the Grand Banks numbered 7 more than the average; between the 55th and 65th meridians, 8 more than the average; and west of the 65th meridian, 3 less than the average.

#### OCEAN ICE IN SEPTEMBER.

The positions of icebergs and field ice reported for September, 1893, are shown on Chart I by crosses (X).

A reference to the table will show that in the last 11 years there have been but two Septembers (1891 and 1892) for which ice has not been reported south of the 50th parallel, and that the eastern limit of ice for the current month is about 2½° east of the average eastern limit for September.

The following table shows the southern and eastern limits

of the region within which icebergs or field ice were reported for September during the last 11 years:

Southern limit.			Eastern limit.		
Month.	Lat. N.	Long. W.	Month.	Lat. N.	Long. W.
September, 1883.....	48 25	47 10	September, 1883.....	49 01	44 33
September, 1884.....	46 06	53 21	September, 1884.....	47 39	49 14
September, 1885.....	45 40	48 22	September, 1885.....	48 40	46 27
September, 1886.....	46 40	53 00	September, 1886.....	48 00	48 40
September, 1887.....	45 37	40 50	September, 1887.....	45 37	40 50
September, 1888.....	Off Cape Race.		September, 1888.....	53 00	52 08
September, 1889.....	46 21	48 22	September, 1889.....	48 59	46 48
September, 1890.....	45 30	48 00	September, 1890.....	50 30	46 22
September, 1891.....	Straits of Belle Isle		September, 1891.....	53 18	51 20
September, 1892.....	Straits of Belle Isle		September, 1892.....	52 04	54 55
September, 1893.....	44 27	48 29	September, 1893.....	46 50	45 20
Mean.....	46 06	48 27	Mean.....	49 25	47 52

\* On the 4th a large lump of ice 100 feet long and 6 feet above water was reported in N. 36° 49', W. 42° 18'; this is the lowest latitude in which ice was ever reported in the north Atlantic Ocean.

#### TEMPERATURE OF THE AIR (expressed in degrees Fahrenheit).

The distribution of mean temperature over the United States and Canada for September, 1893, is shown by the dotted isotherms on Chart II; the lines are, however, not drawn for the higher irregular surface of the Rocky Mountain plateau; the temperatures have not been reduced to sea level, and the isotherms, therefore, relate to the average surface of the country over which they are drawn; in mountainous regions, such isotherms would be controlled largely by the topography, and it is, therefore, not practicable to present the temperature data in this manner unless a contour map on a large scale is published as a base chart.

In the table of meteorological data from voluntary observers, the actual mean temperature is given for each station, and in the table of climatological data, both the mean temperatures and the departures from the normal are given for the regular stations of the Weather Bureau. In the latter table the stations are grouped by geographical districts, for each of which is given the average temperature and departure from the normal. The normal for any district or station may be found by adding the departures to the current average when the latter is below the normal and by subtracting when it is above.

For regular stations of the Weather Bureau the monthly mean temperature is the simple mean of all daily maxima and minima; for voluntary stations a variety of methods of computation is necessarily allowed, as shown by the notes appended to the tabulated meteorological record.

During September, 1893, the mean temperature was highest at a few stations in the lower Colorado valley, where it was a little above 90. The average temperature was from 80 to 85 in extreme southern Florida, at Key West, in the southern half of Texas, and the lower Colorado valley. The temperature was below 55 on the coast of Washington and below 60 on the greater part of the immediate coast of northern California; it was between 50 and 55 in northern New York and New England, the Canadian Maritime Provinces, northern Lake Huron and Lake Michigan, southern Manitoba, and western Montana.

#### DEPARTURES FROM NORMAL TEMPERATURE.

As compared with the normal temperature the mean temperature for September was in excess throughout the interior of the country, being 3 or 4 above in Missouri, southern Illinois, eastern Kansas and Nebraska, and 5 in central Texas. The temperature was below the normal on the Pacific coast and western portion of the Rocky Mountain region, being from 4 to 7 in deficit in central California.

The following table shows for certain stations, as reported by voluntary observers, (1) the normal temperature for September for a series of years; (2) the length of record during which the observations have been taken, and from which the normal has been computed; (3) the mean temperature for September, 1893; (4) the departure of the current month from the normal; (5) the extreme monthly mean for September.

State and station.	(1) Normal for the month of Sept.	(2) Length of record.	(3) Mean for Sept., 1893.	(4) Departure from normal.	(5) Extreme monthly means for September.			
					Highest.	Year.	Lowest.	Year.
<i>Arizona.</i>	0	Years	0	0	0		0	
Fort Apache.....	66.2	21	64.6	- 1.6	71.4	1879	61.0	1884
Fort Mohave.....	85.7	21	81.4	- 4.3	90.2	1875	81.4	1893
Whipple Barracks.....	66.4	22	59.9	- 6.5	74.4	1879	59.9	1893
<i>Arkansas.</i>								
Keesees Ferry.....	70.9	12	72.6	+ 1.7	76.4	1884	67.5	1883
<i>California.</i>								
Fort Bidwell.....	62.1	22	.....	.....	65.9	1880	54.0	1884
Riverside.....	72.5	11	65.5	- 7.0	76.8	1883	65.5	1893
<i>Colorado.</i>								
Las Animas.....	65.6	11	64.9	- 0.7	67.6	1892	63.5	1883
<i>Florida.</i>								
Merritts Island.....	79.7	11	81.0	+ 1.3	82.5	1882	78.0	1890
<i>Georgia.</i>								
Forayth.....	76.3	19	77.4	+ 1.1	82.2	1884	72.8	1888
<i>Idaho.</i>								
Boise Barracks.....	61.2	19	59.0	- 2.2	68.0	1888	54.6	1884
Fort Sherman.....	56.4	10	57.8	+ 1.4	58.6	'85, '91, '92	52.9	1881
<i>Indiana.</i>								
Lafayette.....	64.2	10	67.9	+ 3.7	69.7	1891	61.2	1883
<i>Indian Territory.</i>								
Fort Supply.....	69.8	12	72.4	+ 2.6	72.4	1893	66.6	1890
<i>Iowa.</i>								
Cresco.....	58.9	20	60.5	+ 1.6	64.6	1891	54.3	1873
<i>Kansas.</i>								
Eureka Ranch.....	69.7	10	69.0	- 0.7	74.3	1884	67.1	1883
Independence.....	70.1	21	73.2	+ 3.1	74.9	1881	66.2	1889, 1890
Salina.....	70.3	11	.....	.....	77.3	1884	65.1	1890
<i>Louisiana.</i>								
Grand Coteau.....	77.2	10	77.8	+ 0.6	81.6	1884	74.7	1890
<i>Maine.</i>								
Orono.....	57.0	22	52.3	- 4.7	60.8	1891	52.3	1893
<i>Maryland.</i>								
Cumberland.....	62.4	22	64.0	+ 1.6	70.0	1881	59.3	1888
<i>Michigan.</i>								
Kalamazoo.....	62.2	17	63.3	+ 1.1	69.0	1881	55.2	1879
<i>Missouri.</i>								
Sedalia.....	69.8	9	72.2	+ 2.4	75.9	1881	64.6	1890
<i>Montana.</i>								
Fort Custer.....	58.9	14	61.2	+ 2.3	64.8	1892	54.0	1884
<i>Nebraska.</i>								
Fort Robinson.....	61.6	10	62.6	+ 1.0	67.6	1891	56.1	1886
Genoa (near).....	62.9	17	66.8	+ 3.9	67.0	1891	59.9	1883
<i>Nevada.</i>								
Brown.....	69.7	21	.....	.....	75.9	1888	64.6	1881
Carson City.....	60.9	16	54.4	- 6.5	65.1	1888	54.4	1893
<i>New Hampshire.</i>								
Hanover.....	56.0	22	53.0	- 3.0	62.9	1881	53.0	1893

## Departures from normal temperature—Continued.

State and station.	(1) Normal for the month of Sept.	(2) Length of record.	(3) Mean for Sept., 1893.	(4) Departure from normal.	(5) Extreme monthly means for September.			
					Highest.	Year.	Lowest.	Year.
<i>New Mexico.</i>	°	Years	°	°	°		°	
Deming .....	76.7	11	76.8	+ 0.1	82.0	1888	73.4	1882
Fort Wingate .....	63.4	22	58.2	- 5.2	67.3	1879	58.2	1893
<i>New York.</i>								
Cooperstown .....	55.6	22	54.2	- 1.4	66.7	1881	53.9	1871
Plattsburg Barracks .....	59.2	22	54.8	- 4.4	65.3	1881	53.8	1888
<i>North Carolina.</i>								
Lenoir .....	65.3	21	66.6	+ 1.3	71.1	1884	55.2	1878
<i>Oklahoma.</i>								
Fort Reno .....	71.8	9	72.1	+ 0.3	78.1	1884	68.4	1889
Fort Sill .....	72.8	22	75.0	+ 2.2	77.6	1884	68.8	1882
<i>Oregon.</i>								
Bandon .....	54.4	9	56.0	+ 1.6	57.2	1888	51.2	1886
<i>Pennsylvania.</i>								
Dyberry .....	58.0	20	53.5	- 4.5	66.9	1881	51.8	1871
Grampian .....	60.6	22	59.2	- 1.4	72.0	1881	54.2	1871
Wellsboro .....	58.6	14	53.2	- 5.4	73.8	1881	52.3	1883
<i>South Carolina.</i>								
Statesburg .....	72.4	12	73.1	+ 0.7	77.9	1881	69.9	1888
<i>South Dakota.</i>								
Fort Sully .....	62.4	22	67.2	+ 4.8	68.3	1891	57.3	1873
<i>Texas.</i>								
Austin .....	77.8	20	81.6	+ 3.8	83.2	1884	70.3	1887
Silver Falls .....	72.9	7	75.9	+ 3.0	75.9	1893	70.4	1890
<i>Utah.</i>								
Terrace .....	66.5	19	64.9	- 1.6	78.5	1888	52.0	1884
<i>Vermont.</i>								
Stratford .....	59.8	20	52.8	- 7.0	64.4	1879	52.8	1893
<i>Virginia.</i>								
Dale Enterprise .....	69.4	13	64.1	- 5.3	72.9	1886	59.9	1890
<i>Washington.</i>								
Fort Townsend .....	57.2	18	54.4	- 2.8	63.5	1874	53.9	1884
<i>West Virginia.</i>								
Parkersburg .....	66.1	12	65.7	- 0.4	.....	.....	61.9	1888
<i>Wisconsin.</i>								
Madison .....	60.9	21	61.5	+ 0.6	67.0	1891	56.6	1883
<i>Wyoming.</i>								
Fort Washakie .....	57.1	10	55.7	- 1.4	59.9	1887	52.9	1889

## TEMPERATURE, JANUARY TO SEPTEMBER, 1893.

For the period January 1 to September 30, 1893, the temperature averaged about normal in the west Gulf states and the southern plateau region. The mean temperature for this period was about 1 above the normal in the extreme northwest and about 1.8 on the southern Rocky Mountain slope. The average was below the normal in all other regions, namely: 1 or less in the south Atlantic and east Gulf states, Ohio Valley and Tennessee, upper lake region, Missouri Valley, northern slope, and middle slope; from 1 to 2 in New England, the middle Atlantic states, lower lake region, upper Mississippi valley, middle plateau, and on the south Pacific coast; from 2 to 3 in the northern plateau and on the middle Pacific coast.

## YEARS OF HIGHEST MEAN TEMPERATURE FOR SEPTEMBER.

The mean temperature for September, 1893, was the highest on record, and the corresponding departures from the normal were as follows: Columbia, S. C., +1.8; Corpus Christi, Tex., +2.6; San Antonio, Tex., +5.1; Abilene, Tex., +5.4; Springfield, Mo., +4.3; Topeka, Kans., +4.3.

The highest mean temperatures for September generally occurred in the north-central districts in 1891; over the Rocky Mountain and plateau regions, and along the Pacific coast in 1888; in south-central districts in 1884, and generally east of the Mississippi River in 1881.

## YEARS OF LOWEST MEAN TEMPERATURE FOR SEPTEMBER.

The mean temperature for September, 1893, was the lowest on record, and the corresponding departures were as follows: Portland, Me., -1.9; Northfield, Vt., -4.3; Oswego, N. Y., -3.5; Nantucket, Mass., -3.1; Narragansett Pier, R. I., -3.6; Fort Canby, Wash., -2.9; Roseburg, Oregon, -3.3; Winnemucca, Nev., -3.4; Carson City, Nev., -6.5; Keeler, Cal., -4.3; Fresno, Cal., -7.2. The lowest mean temperature for September generally occurred in Texas in 1889, but in the remaining Gulf States in 1880; in New England and New Jersey in 1888, but in the rest of the middle Atlantic states in

1871; in the lower lake region in 1883; in the upper Mississippi valley and Upper Michigan in 1873; in the Dakotas in 1881; in the Rocky Mountain and plateau regions, and on the middle and north Pacific coasts in 1884.

## MAXIMUM TEMPERATURE.

The highest temperature reported for September by a regular station of the Weather Bureau was 107, at Yuma, Ariz., on the 26th, the other cases of maxima exceeding 100 were: San Antonio, Tex., 103, on the 11th; Abilene, Tex., 104, on the 12th; Oklahoma, Okla., 101, on the 13th; Palestine, Tex., 100, on the 12th; Fort Smith, Ark., 101, on the 13th; Springfield, Mo., 102, on the 14th; Wichita, Kans., 104, on the 13th; Columbia, Mo., 104, on the 14th; Topeka, Kans., 104, on the 13th; Leavenworth, Kans., 100, on the 13th; Kansas City, Mo., 101, on the 13th; Huron, S. Dak., 102, on the 6th. The lowest maxima were 73, at Eastport, Me., on the 13th; 79, at Santa Fe, N. Mex., on the 14th; 72, at San Francisco, Cal., on the 30th; 69, at Eureka, Cal., on the 7th; 62, at Tatoosh Island, Wash., on the 2d.

## MINIMUM TEMPERATURE.

Minimum temperatures of less than 40 were registered throughout the region north of the 40th parallel, except at coast stations on the Atlantic and Pacific oceans. The lowest temperatures generally occurred on or after the 25th of the month. Minimum temperatures of 60 or more were registered at stations on the Gulf and Florida coasts; minima of 40 to 50 occurred in the Pacific and Atlantic states; minima of 30 or less occurred in the greater part of Minnesota, North Dakota, South Dakota, western Nebraska, Wyoming, Montana, Idaho, and Nevada.

## RANGES OF TEMPERATURE.

The greatest daily range of temperature is given for each station in the table of climatological data for Weather Bureau stations. The extreme monthly ranges have been greatest in the Dakotas and Montana, viz., Huron, S. Dak., 84; Valentine, Nebr., between 70 and 80 (77); Yankton, S. Dak., 72; Rapid City, S. Dak., 71; Pierre, S. Dak., 72; Bismarck, N. Dak., 77; Miles City, Mont., 76; Fort Buford, N. Dak., 75. The smallest monthly ranges have been: Tatoosh Island, Wash., 16; Fort Canby, Wash., 31; Eureka, Cal., 29; San Francisco, Cal., 22; San Diego, Cal., 24; Corpus Christi, Tex., 25; Galveston, Tex., 26; Port Eads, La., 22; New Orleans, La., 29; Key West, Fla., 21; Jupiter Fla., 19; Tampa, Fla., 24; Hatteras, N. C., 25; Vineyard Haven, Mass., 31; Block Island, R. I., 25; Eastport, Me., 32. From these outlying stations the monthly ranges increase as we proceed inward to the Dakotas and Montana.

## FROST.

Frost injurious to vegetation was reported as follows: 3d, Monroe, Mich., tender vegetation and vines on low lands killed. 7th, Singletree, Utah, potatoes and grain killed. 11th, Fort Stanton, N. Mex., vines injured; Susanville, Cal., vegetation damaged. 13th, Lander, Wyo., vegetation injured; Salt Lake City, Utah, some damage to tomato and cucumber vines. 16th, Huron, S. Dak., late vegetation killed. 18th, Larrabee, Iowa, corn and vines killed; Helena, Mont., tomato vines slightly injured. 21st, Salt Lake City, Utah, tender vegetation injured. 22d, North Platte, Nebr., plants and tomato vines damaged; Great Falls, Mont., vines killed; in the vicinity of Olympia, Wash., vegetation damaged. 23d, Valentine, Nebr., vegetables and late corn on low lands damaged; Helena, Mont., all vegetation killed.

24th, Alpena, Mich., all vegetation injured; Sault Ste. Marie, Mich., garden truck slightly damaged. 25th, Riley, Ill., corn and tender vegetation killed; Alta and Cedar Rapids, Iowa, all vegetation killed; Des Moines, Iowa, tender vegetation in

some places killed; Hopeville, Iowa, tender plants killed; Bonniwells Mills, Minn., all vegetation killed; North Platte, Nebr., all plants and vegetation killed; Denver, Colo., tender vegetation injured. 26th, in central Illinois corn was greatly damaged; Grand Haven, Mich., considerable damage to vegetation; Table Rock, Nebr., vines killed and corn injured on low lands. 27th, in the interior of Michigan late crops damaged; Nelsonville, Ohio, late corn, garden truck, and plants greatly damaged.

The first light frost of the season was reported as follows: 1st, Flagstaff, Ariz.; Rock Rapids, Iowa; Calais and East Machias, Me.; Arbela, Mich. 2d, Corning, Dubuque, and Jefferson, Iowa; Clinton, Crystal Falls, Harbor Springs, and Paris, Mich.; Monero, N. Mex.; Honeymead Brook, N. Y.; Beulah, Oregon; Towanda, Pa.; Spencer, W. Va.; Amherst, Centralia, and Green Bay, Wis. 3d, Greenfield Hill and Storrs, Conn.; Mauzy, Ind.; Shelbyville, Ky.; Belfast, Cornish, Farmington, and Mayfield, Me.; Boettcherville, New Market, Oakland, and Sunnyside, Md.; Amherst, Blue Hill Observatory, Concord, Gilbertville, Leicester, Ludlow Center, Monroe, Salisbury, and Westboro, Mass.; Concord, East Canterbury, Grafton, Manchester, and Sanbornton, N. H.; Junction, N. J.; Gloversville, Ithaca, South Kortright, Turin, and Waverly, N. Y.; Canton, Cincinnati (near), Garrettsville, Lordstown, New Holland, Orangeville, Weymouth, and Portsmouth, Ohio; Aqueduct and Dyberry, Pa.; Hartland, Jacksonsville, Norwich, Simonsville, Strafford, and Woodstock, Vt.; Kingwood, W. Va. 4th, Malone, N. Y.; Central Station, W. Va. 5th, Nashua, N. H. 6th, Gardiner, Me.; Belmont, Nev. 7th, Tehachapi, Cal.; Eastport, Me.; Groton, Mass.; Loa, Utah. 8th, Monitors Ranch and Winnemucca, Nev. 9th, Stanton, Mich.; Dover, N. J.; Perry City and Rochester, N. Y.; Ellensburg and Moxee, Wash.

10th, Gold Hill, Nev. 11th, Colorado Springs, Colo.; Lewiston and Orono, Me.; Bethlehem, N. H. 12th, Placerville, Cal.; Leominster, Mansfield, Middleboro, New Bedford, and South Dennis, Mass.; Lewers Ranch, Nev.; Somerville, N. J.; Port Angeles, Wash. 13th, Randolph, Mass.; Salt Lake City, Utah. 14th, Julian, Cal. 15th, Tipton, Iowa; Achilles, Kans.; David City, Genoa, and York, Nebr. 16th, Rushville, Ill.; Belle Plaine, Carroll, Logan, and Sioux City, Iowa; Downs, Lebo, Manhattan, Olathe, Pauline, Pleasant Dale, and Topeka (near), Kans.; Bird Island, Minn.; Akron, Carrollton, Fairport, Kidder, Oregon, Princeton, and Vilas, Mo.; Ansley, Glenwood, Harvard, Hebron, Holdredge, Kearney, Lexington, Minden, O'Neill, Santee Agency, Stanton, Sublette, and Table Rock, Nebr.; Frankfort and Hotch City, S. Dak.

17th, Olney, Oswego, and Streator, Ill.; Butlerville, Marengo, Seymour, and Shelbyville, Ind.; Webster City, Iowa; Eubank and Mount Sterling, Ky.; Escanaba, Mich.; Bailey and Highlands, N. C.; Bloomington, Camp Dennison, Coalton, Fostoria, Kilbourne, Lewisburg, Milligan, Pataskala, and Ripley, Ohio; Greensboro, Pa.; Nunnally and Rugby, Tenn.; Bluefield, W. Va. 18th, Helena, Mont.; Glens Falls, N. Y.; Blowing Rock and Flat Rock, N. C.; Williams, Oregon; Midland, S. Dak. 19th, San Jose, Cal.; Hay Springs, Nebr.; Fort Buford, N. Dak.; Chelan, Wash. 20th, Reno, Nev.; Baldwinville, N. Y.

21st, Georgetown, Cal.; Buffalo, Oswego, and Palermo, N. Y.; Ashland, Oregon; Fort Townsend, Wash. 22d, Middletown, Cal.; Duluth, Minn.; Cowgill, Mo.; Madrid and Nesbit, Nebr.; Hood River and The Dalles, Oregon; Spearfish, S. Dak.; Olympia, Pine Hill, Union City, and Walla Walla, Wash. 23d, San Ardo, Cal.; Lancaster, Ky.; Steelville, Mo.; North Royalton, Ohio; Hubbard, Oregon; Pierre, S. Dak. 24th, Angola, Ind.; Elkader and Maxon, Iowa; Ann Arbor, Mich.; Canton and Darksville, Mo.; New Brunswick (near), N. J.; Toledo, Ohio; La Crosse and Milwaukee, Wis. 25th, Denver, Colo.; Bushnell, Carlinville, Chicago, Galva, Havana,

Hennepin, Mount Pulaski, Ottawa, and Walnut, Ill.; Davenport, Fort Madison, Keokuk, Mount Pleasant, Muscatine, Richland, and Washington, Iowa; Allison, Atchison, Beloit (near), Cawker, Concordia, Gove City, La Crosse, Lakin, Leavenworth, Morland, Utica, Wakefield, and Washington, Kans.; Burlington, Ky.; Sand Beach and Vandalia, Mich.; Bethany, Brunswick, Farmersville, Fayette, Fox Creek, Glasgow, Gordonville, Hannibal, Kansas City, Lamont, La Platte, Lebanon, Lexington, McCune, Marceline, Miami, New Boston, New Palestine, Vermont, and Virgil City, Mo.; Beaver City and Franklin, Nebr.; Cambridge and Youngstown, Ohio.

26th, Corning and Keesees Ferry, Ark.; Cairo, Golconda, Greenville, Herrins Prairie, Jordans Grove, Martinsville, Mattoon, Mount Carmel, Palestine, Pana, Peoria, Philo, and White Hall, Ill.; Cambridge City, Connersville, Degonia Springs, Franklin, Huntingburg, Jasper, Princeton, Rushville, Union City, Vevay, and Worthington, Ind.; Bowling Green (near), Greendale, Paducah, and Shelby City, Ky.; Leeds, Mass.; Grand Rapids, Mich.; Clarksdale, Miss.; Birch Tree, Bluffton, Dixon, Edge Hill, Fulton, Gayoso, Half Way, Mine La Motte, New Hartford, Oakfield, Olden, Osceola, Panacea, Phillipsburg, Saint Charles, Saint Louis, Vanceleve, Warrenton, and Whiteside, Mo.; Hanover, N. H.; Addison, Binghamton, Hess Road Station, and Le Roy, N. Y.; Bangorville, Bethany, Big Prairie, Bissells, Bladensburg, Bloomingburg, Canton, Carrollton, Cedarville, Cleveland, Colebrook, Columbus, Dayton, Gratiot, Hillhouse, Jacksonboro, Levering, Mansfield, Milfordton, Mountsville, New Berlin, Pomeroy, Sandusky, Stoutsville, Waynesville, and Wheeler, Ohio; Pittsburg (near), Pa.; Hyde Park and Wells, Utah.

27th, New Hartford and New Haven, Conn.; Wallace, Kans.; Flemingsburg, Harrodsburg, Lexington, and South Fork, Ky.; Fitchburg and Williamstown, Mass.; Brookline, N. H.; Port Jervis, N. Y.; Canal Dover, Cherry Fork, Cincinnati, Demos, Guysville, Hanging Rock, Hillsboro, Killbuck, Nelsonville, and Wooster, Ohio; Christiansburg and Hot Springs, Va.; Ella and New Martinsville (near), W. Va. 28th, Washington, D. C.; Laconia, Ind.; Bachmans Valley, Baltimore, Fallston, Fenton, and Glyndon, Md.; Worcester, Mass.; Charlotteburg, Elizabeth, Newark, Rancocas, and Tenafly, N. J.; Albany, Fleming, Humphrey, Rondout, and Wappingers Falls, N. Y.; Quakertown, Pa.; Franklin (near) and Springdale, Tenn.; Marion, Woodstock, and Wytheville, Va.; Parkersburg and Sandyville, W. Va.

29th, Montrose, Colo.; Middletown and Stevenson, Conn.; Barren Creek Springs and Cumberland, Md.; Kalamazoo, Mich.; Chester, Newton, Readington, and Trenton, N. J.; Vanceburg, Ohio; New Bridge, Oregon; Gettysburg, Pa.; Wier, Tenn.; Green River, Utah; Dale Enterprise, Lexington, and Marion, Va.; Martinsburg and Morgantown, W. Va. 30th, Centerville, Cal.; Frederick, Md.; Belvidere, Bridgeton, Egg Harbor City, Franklin, Franklinville, Friesburg, Imlaytown, Millville, New Brunswick, Paterson, Plainfield, Pochunk Mount, Toms River, and Vineland, N. J.; Santa Fe, N. Mex.; Tarboro, Washington, and Willeyton, N. C.; Easton, Pa.; Burlington, Vt.; Falls Church, Fredericksburg, Saluda, Spottsville, and Stanardsville, Va.

The first heavy frost of the season was reported as follows: 2d, Beulah, Oregon; Amherst and Centralia, Wis. 3d, Beverly Farms, Mass. 4th, Monero, N. Mex. 6th, Calais, Me.; McDermitt, Nev.; Shawano, Wis. 7th, Arboles, Colo.; Palmetto, Nev.; Chama, N. Mex.; Singletree, Utah. 8th, Elko (near) and Wabaska, Nev. 9th, Flagstaff, Ariz.; Como and Pagoda (near), Colo.; Sulphur Hot Springs, N. Mex.; Loa and Thistle, Utah. 10th, McCoy, Colo. 11th, Susanville, Cal.; Belmont, Cranes Ranch, and Tybo, Nev.; Fort Stanton, N. Mex.; Irasburg, Vt. 12th, Carson City, Nev.; Saratoga, Wyo. 13th, Stamford, Colo.; Winnemucca, Nev. 14th, Tehachapi, Cal.; Idaho Falls, Idaho; North Loup, Nebr. 15th,